

## **Chapter 3**

# **Standards and Legislation on Lead Hazards & Exposure**

### **Contents:**

Introduction

Summary of Federal & State Environmental Standards for Lead

Federal Law: Title X and Title XV

Wisconsin Statutes & Administrative Codes

Wisconsin Statute 254, Environmental Health

Wisconsin Administrative Code 163, Certification for the Identification, Removal, and Reduction of Lead-Based Paint Hazards

Wisconsin Administrative Code 181, Reporting of Blood Lead Test Results

Department of Agriculture, Trade, and Consumer Protection,

Wisconsin Administrative Code 134, Residential Rental Code

Wisconsin Statute 704, Landlord and Tenant

Wisconsin Statute 709, Disclosures by Owners of Residential Real Estate

## Introduction

A number of federal and state regulations and laws provide the infrastructure within which lead hazard reduction and childhood lead poisoning prevention activities operate. At the national level, the U.S. Department of Housing and Urban Development (HUD), the Environmental Protection Agency (EPA), Occupational Safety & Health Administration (OSHA), the Centers for Disease Control & Prevention (CDC), the Federal Drug Administration (FDA), and the Consumer Product Safety Commission (CPSC) all play roles in regulating the presence of lead in our environment(s).

At the state level, Wisconsin Law, through the Department of Health and Family Services (DHFS), the Department of Agriculture, Trade and Consumer Protection (DATCP), and the Department of Natural Resources (DNR) strengthen federal legislation and assist Wisconsin citizens in protecting themselves against lead hazards.

## Summary of Federal and State Environmental Standards for Lead

Figure 3.1 provides information on the state and federal standards relevant to lead toxicity to human health and the environment. These standards indicate the level of lead that is deemed to be non-hazardous to the population. In some cases, the lead standards are mandated (regulation), and in others they are only recommended standards (advisory).

### Workplace Standards

Maximum allowable levels of lead in the air and blood of people in the workplace, as well as employer responsibilities, are set by the OSHA:

- The maximum permissible exposure limit (PEL) of lead in workroom air is at 50  $\mu\text{g}/\text{m}^3$  averaged over an 8-hour workday
- For workers exposed to air concentrations  $\leq 30 \mu\text{g}/\text{m}^3$  for more than 30 days per year, OSHA mandates regular blood lead levels (BLLs) be drawn. If a BLL is found to be  $> 40 \mu\text{g}/\text{dL}$ , the worker must be notified in writing and provided with a medical examination. If a worker's BLL reaches 60  $\mu\text{g}/\text{dL}$  (or averages 50  $\mu\text{g}/\text{dL}$  or more), the employer is obligated to remove the employee from excessive exposure, with maintenance of seniority and pay until the employee's BLL falls below 40  $\mu\text{g}/\text{dL}$ . A copy of the lead standards can be obtained by calling your regional OSHA office or the Adult Blood Lead Program in the Bureau of Occupational Health (608-266-7298).

**Figure 3.1 Summary of Standards and Regulations for Lead**

Agency*	Focus	Level**	Comments
CDC Wisconsin Statute 254	Blood	10 µg/dL	Advisory Regulation
OSHA	Blood	25 µg/dL	Advisory
OSHA	Blood	50 µg/dL	Regulation
OSHA	Air	50 µg/m <sup>3</sup> Over an 8 hour workday 30 µg/m <sup>3</sup> More than 30 days/year	Regulation
EPA	Air	1.5 µg/m <sup>3</sup>	Regulation
EPA WI DNR	Water	15 ppb	Regulation
HUD	Uncarpeted floors Window sills Window wells	40 µg/ft <sup>2</sup> 250 µg/ft <sup>2</sup> 800 µg/ft <sup>2</sup> clearance only	Regulation in federally owned/ assisted housing
EPA	Soil in play areas Uncarpeted floors Window sills Window wells	400 ppm 40 µg/ft <sup>2</sup> 250 µg/ft <sup>2</sup> 800 µg/ft <sup>2</sup> clearance only	Regulation
FDA	Food, Dishware	Varies by type of dishware	Advisory
CPSC	Paint	600 ppm (0.06 percent)	Regulation
Wisconsin Statute 254	Paint	0.7 mg/cm sq dry paint 0.06% wet paint	Regulation

\*CDC = Centers for Disease Control and Prevention; CPSC = Consumer Products Safety Commission; EPA = Environmental Protection Agency; FDA = Food and Drug Administration; OSHA = Occupational Safety and Health Administration; HUD = Housing and Urban Development; WI DNR = Wisconsin Department of Natural Resources

\*\* µg/dL = micrograms per deciliter      µg/m<sup>3</sup> = micrograms per cubic meter  
ppm = parts per million      ppb = parts per billion  
µg/ft<sup>2</sup> = micrograms per square foot.

## **Air Standards**

Environmental standards for lead in the air are set to protect the most susceptible individual in the general population. They are stricter than occupational exposure limits, which are generally set to accommodate healthy people working an 8-hour workday. The EPA regulatory standard for lead in the air is  $\leq 1.5 \mu\text{g}/\text{m}^3$  averaged over a calendar quarter.

## **Drinking Water Standards**

The EPA is required to set drinking water standards at two levels of protection:

- The maximum contaminant level goals (MCLGs) are determined to be safe for toxicological and biomedical considerations. The EPA has set this level at zero for lead.
- The action level defines when intervention is required to lower the level in drinking water. The action level for lead is when more than 10% of tap water samples are  $>15$  ppb. For further information, call the U.S. EPA Safe Drinking Water Hotline at 1-800-426-4791.

The Wisconsin DNR has adopted the federal action level of 15 parts per billion (ppb) for lead, and works with communities to reduce lead in the water through central treatment of their water system. System-wide efforts can be designed to reduce the actual corrosivity of the water, coat the piping with an additive, which acts as a barrier between the pipe and the water, or replace the lead pipes. (DNR, 1992).

Plumbing and well components are major contributors to lead in drinking water. The Wisconsin Well Code prohibits the use of lead in any well or pump component. In 1972, the Wisconsin Department of Industry, Labor and Human Relations (DILHR) banned lead service lines. In 1984, DILHR with the support of the Wisconsin Department of Natural Resources (DNR) and the Department of Health and Social Services (DHSS), passed a ban on lead solder and lead-containing fluxes used in water supply systems.

## **Food Standards**

Regulating lead contamination in food is the responsibility of the FDA. The FDA has recommended the following limits on lead intake levels:

- ✓ Children  $\leq 6$  years old:  $\leq 6 \mu\text{g}/\text{dL}$
- ✓ Pregnant women:  $25 \mu\text{g}/\text{dL}$
- ✓ Other adults:  $75 \mu\text{g}/\text{dL}$

According to a 1988 Agency for Toxic Substances and Disease Registry (ATSDR) report, the FDA had estimated that about 20 percent of all dietary lead came from canned food, primarily from lead solder in cans. Following a voluntary decline in use by the U.S. Canned Foods Industry, the FDA banned lead soldered cans in 1995. In 1996, food in lead soldered cans was banned from shelves of U.S. groceries.

**Imported canned foods may still contain lead.**

The FDA established guidelines for the amount of lead allowed to leach from ceramic pottery. These levels depend on how frequently the dish is used, the type and temperature of the food it holds, and how long the food is kept in contact with the

piece. For example, the most stringent guideline is 0.5 ppm for cups, mugs and pitchers because they are more likely to hold acidic foods such as juice and coffee for longer periods of time. **Ceramics and pottery may still be potential sources of dangerously high levels of lead if imported from a country where lead is not closely regulated.**

Food may also contain unsafe lead levels if grown in lead contaminated soil.

### **Paint Standards**

In 1977, the Consumer Product Safety Commission limited the lead in residential paint to 0.06 percent (600 ppm by dry weight). Paint for bridges, marine, and other use may contain greater amounts of lead.

In Wisconsin, "lead-bearing paint" is defined as any paint or other surface coating material containing more than 0.06 percent lead by weight in liquid paint or more than 0.7 milligram of lead per square centimeter in the dried film of applied paint, usually measured with an XRF instrument (WI Stat 254.11(8)).

## **Federal Legislation on Lead Hazard Reduction**

### **TITLE X - Residential Lead-Based Paint Hazard Reduction Act**

In October 1992, the Residential Lead-Based Paint Hazard Reduction Act (P.L. 102-550), commonly known as Title X, became law. Title X was the most comprehensive and significant federal legislation on lead poisoning in over 20 years. It includes specific requirements related to pre-1978 housing, public education about lead hazards, and building infrastructure to support lead hazard reduction activities. The key provisions of Title X are described below.

- Title X Provisions: Pre-1978 Housing:
  - The Federal Government as a model landlord. Title X includes a series of requirements covering disposition of federally-owned property, as well as inspection, risk assessment, hazard reduction, and abatement activities for federally-associated housing. If families of lead poisoned children reside in federally owned housing, the landlord to be contacted for lead hazard reduction is the federal government (Milwaukee HUD office, 414-297-3214, ext. 8670)
  - Disclosure of known lead hazards. As a result of Title X the EPA and HUD published a rule entitled, *Lead: Requirements for Disclosure of Known Lead-Based Paint and/or Lead-Based Paint Hazards in Housing*. The effective date for the rule for all property owners was December 6, 1996. It requires persons selling or leasing residential housing built before 1978 to:
    - Provide purchasers and renters with a federally approved pamphlet, *Protect Your Family From Lead in Your Home*;
    - Disclose the presence of any known lead-based paint (LBP) or LBP hazard to purchasers and renters;

- Provide the purchasers a 10-day opportunity to get a lead hazard inspection;
  - Provide purchasers or renters with any available records regarding any known LBP;
  - Include certain disclosure and acknowledgment language in sales and leasing contracts; and
  - Requires all agents involved in these transactions to make sure that the seller or landlord complies with the law.
- Title X Provisions: Worker Training & Public Information
    - *Lead: Requirements for Lead-Based Paint Activities in Target Housing and Child Occupied Facilities*, EPA, August 1996. This rule specifies requirements for 1) accredited training programs; 2) certification/licensing of paint contractors, workers, supervisors, inspectors, and planners working with LBP; 3) all risk assessments, inspections, and abatement activities in target housing are to be performed by certified contractors. Target housing means any dwelling built before 1978 (except those without a bedroom unless inhabited by a child under 6 years of age, and dwellings built for the elderly or persons with disabilities).
    - “Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing”, HUD, June 1995. This is available from HUD USER at 1-800-245-2691 for \$45.
    - “Lead: Requirements for Hazard Education before Renovation of Target Housing”, EPA, June 1998.
    - “*Lead Exposure in Construction*”, OSHA, December 1993. This is the standard for worker protection against lead exposure. It is available from the U. S. Department of Labor, OSHA Chicago Office (312-353-2220).
  - Title X Provisions: Infrastructure Building
 

To promote capacity building for sustained lead hazard reduction in a community, the following activities are required.

    - A Comprehensive Housing Affordability Strategy (CHAS) must be developed by State and local governments as a prerequisite to receiving federal housing or community development funds. Title X requires that the CHAS include an estimate of the number of housing units containing LBP hazards that are occupied by low-income families, and that the CHAS outline the actions being taken or proposed to reduce these hazards.
    - A Task Force on Lead-Based Paint Hazard Reduction and Financing was established to make recommendations to HUD and EPA on a range of issues relating to financing and insurance, underwriting and appraisal guidelines, and clarifying confusion over standards of care for property owners. In June 1995, the Task Force released a report called, “Putting the Pieces Together: Controlling Lead Hazards in the Nation’s Housing”. The report summarized ideas for a system that will protect children from developing elevated BLLs,

preserve our stock of affordable housing, and wisely invest scarce resources, both public and private. Copies of the task force report are available by calling 1-800-245-2691.

### **Title XV - Lead Exposure Reduction Act**

This amendment to the Toxic Substances Control Act in 1992 directs the EPA to address the general public's risk of exposure to lead-based paint hazards. Of particular concern is exposure that can occur during renovations of building components containing lead-based paint. Commonly referred to as the "pre-renovation rule", it took effect in June 1999. The key points to this legislation, found in section 406(b) requires that renovators working for compensation:

- Distribute the pamphlet "*Protect Your Family From Lead in Your Home*" to owners and occupants of target housing built before 1978 before starting renovation activity.
- Apply lead-safe working practices and tenant notification for any activities that disrupt more than 2 square feet of paint per component, and/or are performed in common areas such as hallways and stairwells in multi-family housing are also included.

## **Wisconsin Statutes and Administrative Codes**

### **Department of Health & Family Services**

#### **■ Wisconsin Statute Chapter 254: Environmental Health**

<http://www.legis.state.wi.us/rsb/stats.html>

This statute covers roles, responsibilities and duties in addressing human health hazards in the environment. Sections 254.11 – 254.178 are specific to the diagnosis and treatment of lead poisoning and to the reduction of lead hazards. This act was amended in 1999 to enhance incentive and protection for owners who wish to identify and treat lead hazards on their properties. Key provisions in this act include:

- All blood lead test results of children < 6 years of age are to be reported to the Department of Health and Family Services. HFS 254.13(1);
- Written reports of all environmental investigations are to be prepared, filed, and made available to the public. HFS 254.166(1);
- An environmental investigation shall be performed on homes with children < 6 years of age who have elevated blood lead levels (EBLLs), defined as a blood lead level  $\geq 20$   $\mu\text{g/dL}$  by venous sample or 2 venous BLLs  $\geq 15$  drawn at least 90 days apart. HFS 254.166(1).
- An owner of a dwelling where a child < 6 years of age resides who has an EBLL shall obtain a certificate of lead-free status or lead-safe status in a timely manner. A certificate of lead-safe status may not be for less than 12 months in duration. HFS 254.171.

- Any property owner may apply for a certificate of “lead-free” or “lead-safe” status for their property under rules being established by the DHFS that will provide limited liability to the property owner if a lead poisoned child is present HFS 254.172.
- Allows health departments to order the abatement or removal of human health hazards, including lead, whether a resident has an elevated blood lead level or not and to recoup the cost via local property tax assessment. HFS 254.59

■ **WI Administrative Code 163: Certification for the Identification, Removal and Reduction of Lead-Based Paint Hazards**

<http://www.legis.state.wi.us/rsb/code>

These rules are to ensure that activities involving lead-based paint are done safely without creating or increasing lead hazards. The rules provide standards for the training and certification of all doing such work in Wisconsin, and include:

- The conditions for training and certification of the disciplines involved in lead hazard reduction. HFS163.10-163.12
- Steps for the notification of work involving lead hazard reduction...HFS 163.14 (5)(d)
- Work practice standards for the various disciplines and activities of inspectors, lead hazard screens, risk assessments, lead hazard reduction activities, clearance and collection and laboratory analysis of samples...HFS 163.14

■ **Wisconsin Administrative Code 181: The Reporting of Blood Lead Test Results** <http://www.legis.state.wi.us/rsb/code>

These rules ensure the timely reporting to the DHFS of all tests made to determine the blood lead level of a person. They address the statutory requirements for reporting of all blood lead tests done on Wisconsin residents, and the establishment of a public health surveillance system. It details the information that must be reported to DHFS, the timetable for reporting, and the reporting responsibilities of providers.

**Department of Agriculture, Trade and Consumer Protection**

■ **Wisconsin Administrative Code 134: Residential Rental Code**

<http://www.legis.state.wi.us/rsb/code>

Outlines the requirements for a property owner to disclose any condition of the dwelling which constitutes a health hazard (134.04(2))

■ **Wisconsin Statute Chapter 704: Landlord and Tenant**

<http://www.legis.state.wi.us/rsb/stats.html>

Describes the conditions under which a tenant may move without incurring liability due to untenantability, including conditions that are hazardous to health (704.07(4))



- **Wisconsin Statute Chapter 709: Disclosures by Owners of Residential Real Estate** <http://www.legis.state.wi.us/rsb/stats.html>

In addition to the Federal Disclosure requirements, this act specifies the disclosure of lead in real estate for sale in Wisconsin (709.03).

## References

U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry. *Case Studies in Environmental Medicine: Lead Toxicity*. Pub. No. 99-3380. May, 2000.

Department of Natural Resources. *Lead in Drinking Water*. PUB-DG-015 98REV. November 1998.

Food and Drug Administration. Bulletin No. HSI40. November 15, 1991.

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